CLAIMS

What is claimed is:

1. A method for aggregating network message traffic comprising

identifying regenerable information in the message traffic at a sending side, the regenerable information indicative of data content in the message traffic reproducible at a receiving side from information accessible at the receiving side;

eliminating, by selective extraction and reduction, the identified regenerable information to reduce the volume and associated bandwidth requirements of remaining message traffic to provide reduced message traffic; and

framing the reduced message traffic according to predetermined formatting logic, the formatting logic providing transmission of the remaining reduced message traffic and regeneration of the reproducible data content from the identified regenerable information at the receiving side.

2. The method of claim 1 wherein the message traffic includes message traffic packets and identifying further comprises:

examining, in a classifier, portions of the message traffic packet indicative of a message payload carried in the message traffic packet;

comparing, in the classifier, the portions of the message traffic packet to a predetermined set of expected message traffic types;

classifying, by classification logic in the classifier, the message traffic type, the message traffic type indicative of the regenerable information in the message traffic packet.

3. The method of claim 1 wherein the eliminating further comprises:

mapping the message traffic to reducing logic, the reducing logic having reducing rules based on a message traffic type;

identifying, based on a match between the message traffic type and the reducing rules, the regenerable information, the reducing rules corresponding to the message traffic type; and

applying the selected reducing rules to the message traffic to generate a reduced message, the reduced message including the remaining information in the message traffic without the regenerable information.

4. The method of claim 1 wherein the framing further comprises:

identifying, according to the formatting logic, non-recreatable portions of the message traffic;

storing, in a local message traffic packet, the remaining message traffic, the remaining message traffic including the non-recreatable portions of the message traffic; and

storing, in the local message traffic packet, an indicator corresponding to the eliminated regenerable portion of the message traffic packet, reducing logic at the receiving end being responsive to the indicator to reproduce the regenerable portions of the message traffic.

5. The method of claim 4 wherein the indicator occupies less space than the regenerable information it represents.

6. The method of claim 1 wherein framing further comprises formatting, according to the formatting logic, the remaining message traffic into a reduced message packet, the reduced message packet having a common protocol format according to the formatting logic and applicable to a plurality of message traffic types, and operable to be transmitted to the receiving side for recovering the original message traffic.

7. A method for receiving a plurality of reduced data streams according to a common protocol format comprising:

encoding a common protocol format as formatting logic at a receiving side of the reduced data streams;

receiving, at the receiving side, the plurality of reduced data streams formatted as remaining message traffic with reproducible data content removed;

unframing, according to the formatting logic, the reduced data according to the common protocol format;

identifying, from a set of aggregation rules, regenerable information corresponding to the received reduced data;

reproducing, based on the identified regenerable information, the reproducible data content eliminated at the sending side;

regenerating, by integrating the reproduced data content with the remaining message traffic, the original message traffic including the reproducible data content; and

classifying, by the classifier, the type of the message traffic, the type of message traffic of the original message traffic integrated with the reproducible data content.

8. The method of claim 7 wherein the regenerating corresponds to an original protocol of the original message traffic at the sending side.

9. The method of claim 7 wherein the reproducing of the reproducible data content is undetectable to a remote receiver of the message traffic.

10. The method of claim 1 wherein identifying further comprises:

identifying segments of speech data in the message traffic, the speech segments having a header including a vocoder field indicative of a vocoder, and a content portion corresponding to speech data; and

demarcating segments of the speech data corresponding to voice, silence, and idle content portions.

11. The method of claim 10 wherein the eliminating further comprising

reducing, if the speech data segment corresponds to silence, the duration of the silence content portion by including only a portion of the speech data segment;

eliminating, if the speech data segment corresponds to an idle content portion, the idle speech data segment from the non-recreatable data content item; and

processing, if the speech data segment corresponds to a voice content portion, the voice speech data segment as a non-recreatable data content item.

12. The method of claim 11 wherein processing the speech data segment further comprises selectively eliminating a subset of the voice content portions, selectively eliminating corresponding to a traffic shaping metric indicative of throughput.

13. The method of claim 10 wherein the speech data segments are speech frames, the speech frames corresponding to packets of a predetermined voice protocol from a particular vocoder.

14. The method of claim 13 wherein the speech frames correspond to 20 ms of transmission time.

15. The method of claim 13 wherein the vocoder field is indicative of a payload length of the speech field and is operable to demarcate the segments of speech data.

16. The method of claim 15 wherein each of the vocoder fields comprises vocoder coefficients corresponding to the particular vocoder, and eliminating further comprises grouping common coefficients from different vocoders.

17. The method of claim 1 wherein identifying further comprises:

analyzing the data content for data content segments including signaling data; and

eliminating further comprises eliminating control fields in the signaling data corresponding to control information specified in previous signaling data content segments.

18. The method of claim 17 wherein the signaling data further comprises high-level data link control information operable to provide wireless signal control for at least one of signaling channel selection, power control, reception levels, number dialed, bit padding, keep alive indicators and control flags.

19. The method of claim 17 wherein the message traffic further comprises a plurality of layers, the layers corresponding to the signaling data for mapping and partitioning control, the layers further including:

a receiving layer operable to receive data from a user application;

a selection layer operable to analyze the data in the receiving later and select data adapted to be transmitted;

an efficient optimization layer operable to aggregate and reduce the data adapted to be transmitted, the aggregating and reducing resulting in a lower volume of data for transmission; and

a transport layer operable to transmit a bit-exact payload corresponding to the aggregated and reduced data from the efficient optimization layer.

20. The method of claim 1 further comprising

computing an urgency factor corresponding to the reduced message traffic, the framer responsive to the urgency factor for determining the transmission order for the reduced message traffic;

prioritizing outgoing message traffic from the framer according to the urgency factor, the prioritizing based on a predetermined delay tolerance of the data content type; and

modifying, in the reducer, the reducing logic, the modifying further comprising adjusting compression parameters corresponding to a degree of reduction.

21. The method of claim 20 wherein the degree of reduction is determined by a voice quality ratio, the voice quality ratio indicative of a quantity of data bits per second for voice transmission.

22. The method of claim 20 wherein the urgency factor further includes a priority, the priority corresponding at least to message traffic types of 2G voice data content, 3G voice data content, 3G signaling data content, and IP message traffic.

23. The method of claim 20 wherein the message traffic at the sending side arrives on a particular line, the line having a line type and further comprising determining a line type of at least one of 1G, 2G, 2.5G, and 3G.

24. The method of claim 20 wherein classifying further comprises classifying as a message traffic type selected from the group consisting of 1G voice, 2G voice, 2G data, 3G voice, 3G data, 3G signaling, IP (Internet Protocol), and ATM (Asynchronous Transfer Mode).

25. The method of claim 20 wherein reproducing further comprises reproducing according to type specific aggregation rules, the type of message traffic indicative of the type specific aggregation rules.

26. The method of claim 1 further comprising

identifying message traffic having a fixed packet size and having a protocol header corresponding to a particular circuit;

examining the protocol header of the particular packet:

determining, from the header, whether the packet includes idle data; and

eliminating, if the packet includes idle data, the packet from transmission via the backhaul link.

27. The method of claim 26 further comprising:

replacing the protocol header with an efficient header having a shorter length and corresponding to an alternate circuit from a smaller set of available circuits.

28. The method of claim 26 wherein examining the protocol header occurs prior to receipt of the entire packet.

29. The method of claim 26 wherein the idle data further includes synchronization data for maintaining a virtual circuit independently of transmission demand for payload data.

30. The method of claim 26 further comprising:

detecting, via the protocol header, idle cell payload operable to complement a fixed packet size for maintaining a virtual connection; and

reformatting the data content to correspond to the idle cell to maintain the virtual connection pending additional payload data.

31. The method of claim 26 wherein classifying further comprises

establishing at least one alternate circuit, the alternate circuit selected from a set of circuits smaller than the set of all available circuits;

determining a circuit index corresponding to each of the alternate circuits;

analyzing the data content for connectionless fields indicative of one of a plurality of virtual circuits, the data content having a fixed size and corresponding to a particular virtual circuit;

selecting an alternate circuit for the data content; and

replacing header fields indicative of the particular virtual circuit with the circuit index corresponding to the selected alternate circuit.

32. The method of claim 26 further comprising:

detecting, via the protocol header, padding operable to complement a data content portion according to the fixed packet size;

removing the padding from the data content; and

reformatting the data content to correspond to the removed padding.

33. The method of claim 32 wherein detecting the padding further comprises detecting a data content portion corresponding to at least one of AAL2 and AAL5 fields.

34. The method of claim 31 wherein the virtual circuit corresponds to a virtual path indicator/virtual circuit indicator (VPI/VCI) established by a connectionless, asynchronous switching fabric.

35. The method of claim 1 further comprising:

detecting an operability condition of the backhaul gateway serving one of the sending and receiving sides, the operability condition causing detrimental operation;

identifying a number of operational lines between the sending and receiving sides;

selecting a number of incoming lines to the sending side of the backhaul gateway to remain in service as failover lines;

mapping each of the failover lines to a particular operational line between the sending and receiving sides;

informing the complementary sending or receiving side of the operability condition; and

routing traffic received on each of the failover lines to the corresponding operational line.

36. The method of claim 35 further comprising performing termination processing on the message traffic arriving on the incoming lines other than the failover lines.

37. The method of claim 36 wherein performing the termination processing further includes storing arriving message traffic and tagging the arriving messages for subsequent processing.

38. The method of claim 35 further comprising repeating the inverse of identifying, selecting, and mapping at the complementary side in response to the informing.

39. The method of claim 35 further comprising automatically resuming reduction and aggregation processing upon cessation of the operability condition.

40. The method of claim 35 wherein the routing processing on the failover lines further comprises unconditionally routing in a pass-through manner.

41. A data communications device for aggregating network message traffic comprising:

a classifier operable to identify regenerable information in the message traffic at a sending side, the regenerable information corresponding to data content in the message traffic reproducible at a receiving side from information accessible at the receiving side;

a reducer operable to eliminate the identified regenerable information to reduce the volume and associated bandwidth requirements of the remaining message traffic to provide reduced message traffic; and

a framer operable to frame the reduced message traffic according to predetermined formatting logic, the formatting logic providing transmission of the remaining reduced message traffic and regeneration of the reproducible data content from the identified regenerable information at the receiving side.

42. The data communications device of claim 41 wherein the message traffic includes message traffic packets and wherein the classifier is further operable to:

examine portions of the message traffic packet indicative of a message payload carried in the message traffic packet;

compare the portions of the message traffic packet to a predetermined set of expected message traffic types;

classify, by classification logic in the classifier, the message traffic type, the message traffic type indicative of the regenerable information in the message traffic packet.

43. The data communications device of claim 41 wherein the reducer is further operable to:

map the message traffic to reducing logic, the reducing logic having reducing rules based on a message traffic type;

identify, based on a match between the message traffic type and the reducing rules, the regenerable information, the reducing rules corresponding to the message traffic type; and

apply the selected reducing rules to the message traffic to generate a reduced message, the reduced message including the remaining information in the message traffic without the regenerable information.

44. The data communications device of claim 41 wherein the framer is further operable to:

identify, according to the formatting logic, the non-recreatable portions of the message traffic;

store, in a local message traffic packet, the remaining message traffic, the remaining message traffic including non-recreatable portions of the message traffic; and

store, in the local message traffic packet, an indicator corresponding to the regenerable portion of the message traffic, the reducing logic at the receiving end responsive to the indicator to reproduce the regenerable portions of the message traffic.

45. The data communications device of claim 44 wherein the indicator occupies less space than the regenerable data it represents.

46. The data communications device of claim 41 wherein the framer is further operable to format, according to the formatting logic, the remaining message traffic into a reduced message packet, the reduced message packet format having a common protocol format according to the formatting logic and applicable to a plurality of message traffic types; and operable to be transmitted to the receiving side for recovering the original message traffic.

47. A data communications device for receiving a plurality of reduced data streams according to a common protocol format comprising:

a framer encoded with a common protocol format as formatting logic at a receiving side of the reduced data streams;

at least one packetizing engine operable to receive, at the receiving side, the plurality of reduced data streams formatted as remaining message traffic with reproducible data content removed, the packetizing engine further operable to unframe, according to the formatting logic, the reduced data according to the backhaul protocol format;

a reducer having aggregation rules operable to identify, from the aggregation rules, regenerable information corresponding to the received reduced data;

at least one bandwidth reduction engine in the reducer operable to reproduce, based on the identified regenerable information, the reproducible data content eliminated at the sending side;

reducing logic in the reducer operable to regenerate, by integrating the reproduced data content with the remaining message traffic, the original message traffic including the reproducible data content; and

a classifier operable to classify the type of message traffic of the original message traffic after integration with the reproducible data content.

48. The data communications device of claim 47 wherein the regenerating corresponds to an original protocol of the original message traffic at the sending side.

49. The data communications device of claim 47 wherein the reducer is operable to reproduce the reproducible data content in a manner undetectable to a remote receiver of the message traffic.

50. The data communications device of claim 41 wherein the classifier is further operable to:

identify segments of speech data in the message traffic, the speech segments having a header including a vocoder field indicative of a vocoder, and a content portion corresponding to speech data; and

demarcate segments of the speech data corresponding to voice, silence, and idle content portions.

51. The data communications device of claim 50 wherein the reducer is further operable to:

reduce, if the speech data segment corresponds to silence, the duration of the silence content portion by including only a portion of the speech data segment;

eliminate, if the speech data segment has an idle content portion, the idle speech data segment from the non-recreatable data content item; and

process, if the speech data segment has a voice content portion, the voice speech data segment as a non-recreatable data content item.

52. The data communications device of claim 51 wherein the reducer is further operable to process the speech data segment by selectively eliminating a subset of the voice content portions, selectively eliminating corresponding to a traffic shaping metric indicative of throughput.

53. The data communications device of claim 50 wherein the speech data segments are speech frames, the speech frames corresponding to packets of a predetermined voice protocol from a particular vocoder.

54. The data communications device of claim 53 wherein the speech frames correspond to 20 ms of transmission time.

55. The data communications device of claim 53 wherein the vocoder field is indicative of a payload length of the speech field and is operable to demarcate the segments of speech data.

56. The data communications device of claim 55 wherein each of the vocoder fields comprises vocoder coefficients corresponding to the particular vocoder, and eliminating further comprises grouping common coefficients from different vocoders.

57. The data communications device of claim 41 wherein the classifier is further operable to:

analyze the data content for data content segments including signaling data; and

eliminate control fields in the signaling data corresponding to control information specified in previous signaling data content segments.

58. The data communications device of claim 57 wherein the signaling data further comprises high-level data link control information operable to provide wireless signal control for at least one of signaling channel selection, power control, reception levels, number dialed, bit padding, keep alive indicators, and control flags.

59. The data communications device of claim 57 wherein the message traffic further comprises a plurality of layers, the layers corresponding to the signaling data for mapping and partitioning control, and to data content fields, the layers further including

a receiving layer operable to receive data from a user application;

a selection layer operable to analyze the data in the receiving later and select data adapted to be transmitted;

an efficient optimization layer operable to aggregate and reduce the data adapted to be transmitted, the aggregating and reducing resulting in a lower volume of data for transmission; and

a transport layer operable to transmit a bit-exact payload corresponding to the aggregated and reduced data from the efficient optimization layer.

60. The data communications device of claim 41 wherein the reducer is further operable to

compute an urgency factor corresponding to the reduced message traffic, the framer responsive to the urgency factor for determining the transmission order for formatted message traffic;

prioritize outgoing message traffic from the framer according to the urgency factor and based on a predetermined delay tolerance of the data content type; and

modify the reducing logic, the modifying further comprising adjusting compression parameters corresponding to a degree of reduction.

61. The data communications device of claim 60 wherein the reducer is further operable to determine the degree of reduction by a voice quality ratio, the voice quality ratio indicative of a quantity of data bits per second for voice transmission.

62. The data communications device of claim 60 wherein the urgency factor further includes a priority, the priority corresponding at least to message traffic types of 2G voice data content, 3G voice data content, 3G signaling data content, and IP message traffic.

63. The data communications device of claim 60 further comprising a plurality of ingress lines, wherein the message traffic at the sending side arrives on a particular ingress line, the ingress line having a line type and further comprising determining a line type of at least one of 1G, 2G, 2.5G, and 3G.

64. The data communications device of claim 60 wherein the classifier is further operable classifying a message traffic type selected from the group consisting of 1G voice, 2G voice, 2G data, 3G voice, 3G data, 3G signaling, IP (Internet Protocol), and ATM (Asynchronous Transfer Mode).

65. The data communications device of claim 60 wherein the reducer is further operable to reproduce the reproducible data according to type specific aggregation rules, the type of message traffic indicative of the type specific aggregation rules.

66. The data communications device of claim 41 further comprising:

a plurality of ingress virtual circuits, the reducer further operable to identify message traffic having a fixed packet size and having a protocol header corresponding to a particular circuit; and

reducing logic in the reducer, the reducing logic further operable to:

examine the protocol header of the particular packet:

determine, from the protocol header, whether the packet includes idle data; and

eliminate, if the packet includes idle data, the packet from transmission via the backhaul link.

67. The data communications device of claim 66 further comprising:

at least one alternate circuit from a smaller set of available circuits, the reducer further operable to replace the header with an efficient header having a shorter length and corresponding to one of the alternate circuits.

68. The data communications device of claim 66 wherein the reducer is further operable to:

establish at least one alternate circuit, the alternate circuit selected from a set of circuits smaller than the set of all available circuits;

determine a circuit index corresponding to each of the alternate circuits;

analyze the data content for connectionless fields indicative of one of a plurality of virtual circuit, the data content having a fixed size and corresponding to a particular virtual circuit;

select an alternate circuit for the data content; and

replace header fields indicative of particular virtual circuit with the circuit index corresponding to the selected alternate circuit.

69. The data communications device of claim 66 wherein the reducer is further operable to examine the protocol header prior to receipt of the entire packet.

70. The data communications device of claim 66 further comprising idle cell payload, wherein the reducer further is operable to:

detect, via the protocol header, idle cell payload operable to complement a fixed packet size for maintaining a virtual connection; and

reformat the data content to correspond to the idle cell to maintain the virtual connection pending additional payload data.

71. The data communications device of claim 66 wherein the message traffic

corresponding to the idle data further includes synchronization data for maintaining a virtual circuit independently of transmission demand for payload data.

72. The data communications device of claim 66 wherein the message traffic further comprises:

cell padding, the reducer further operable to detect, via a protocol header, the cell padding operable to complement a data content portion according to the fixed packet size, the reducer further operable to removing the padding from the data content, reformatting the data content portion to correspond to the removed padding.

73. The data communications device of claim 72 wherein the cell padding further comprises a data content portion corresponding to at least one of AAL2 and AAL5 fields.

74. The data communications device of claim 66 wherein the virtual circuit corresponds to a virtual path indicator/virtual circuit indicator (VPI/VCI) established by a connectionless, asynchronous switching fabric.

75. The data communications device of claim 41 wherein the backhaul gateway is further operable to:

detect an operability condition of the backhaul gateway serving one of the sending and receiving sides, the operability condition detrimental to message throughput;

identify a number of operational lines between the sending and receiving sides;

select a number of incoming lines to the sending side of the backhaul gateway to remain in service as failover lines; and

map each of the failover lines to a particular operation line between the sending and receiving sides, the data communications device further comprising a failover message operable to inform the complementary sending or receiving side of the operability condition, the sending backhaul gateway operable to route traffic received on each of the failover lines to the corresponding operational line.

76. The data communications device of claim 75 wherein the backhaul gateway is operable to perform termination processing on the message traffic arriving on the incoming lines other than the failover lines.

77. The data communications device of claim 76 wherein the backhaul gateway is operable to perform the termination processing including storing arriving message traffic and tagging the arriving messages for subsequent processing.

78. The data communications device of claim 75 wherein the backhaul gateway is further operable to repeat the inverse of identifying, selecting, and mapping at the complementary side in response to the informing.

79. The data communications device of claim 75 further comprising a resume message, wherein the backhaul gateway is further operable to automatically resume reduction and aggregation processing upon cessation of the operability condition by sending the resume message.

80. The data communications device of claim 75 wherein the routing processing on the failover lines further comprises unconditionally routing in a pass-through manner.

81. A data communications system for identifying, aggregating, and reducing network message traffic between gateways in for heterogeneous message traffic

a first network communications gateway and a second network communications gateway connected between a wireless access transceiver and a wired network switching office for aggregating and reducing message traffic comprising:

a classifier in the first network communications gateway operable to identify, from original message traffic, information at the first network communications gateway which is reproducible from information accessible at the second network information gateway;

a reducer in the first network communications gateway operable to remove the identified information from the message traffic to be sent from the first network

communications gateway to the second network communications gateway, to generate optimized message traffic;

a framer in the first network communications gateway operable to aggregating, according to an efficient optimization format, the optimized message traffic, the framer further operable to transmit the optimized message traffic from the first network communications gateway to the second network communications gateway, the second network communications gateway operable to reproducing, from the optimized message traffic, the removed, identified information according to the efficient optimization format, to generate the original message traffic.

82. The system of claim 81 wherein the first network communications gateway corresponds to a first endpoint receiving a plurality of information streams, each of the information streams associated with a particular message type.

83. The data communications system of claim 81 further comprising:

classification logic in the classifier operable to parse message traffic and compare the parsed message traffic to expected message types;

reducing logic in the reducer, the reducing logic operable to receive an indication of the expected message types and selectively process the message traffic based on the expected message type;

aggregation rules in the reducing logic, each of the aggregation rules corresponding to a particular one of the expected message types, the aggregation rules specifying a set of selective operations for applying to the message traffic, the selective operations operable to extract the data corresponding to recreatable information, and further operable to generate reduced and aggregated data including unrecreatable data;

a plurality of bandwidth reduction engines operable to apply the aggregation rules to the message traffic;

a formatter operable to apply a backhaul protocol to the unrecreatable data, the backhaul protocol further operable to enumerate each of the expected message types according to a common protocol format;

formatting logic in the formatter operable to frame the unrecreatable data according to the common protocol format, and further operable to identify the eliminated recreatable data in the framed common protocol format; and

a plurality of packetizing engines operable to packetize and transmit, to the second communications gateway, the framed date in to message packets according to the common protocol format.

84. A computer system, comprising:

a memory system;

a processor;

an interface coupled to a network;

a common access gateway; and

an interconnection mechanism connecting the processor, the memory system, the interface and the common access gateway;

wherein the memory system is encoded with a gateway reduction and aggregation application that when performed on the processor, produces a gateway process that performs reduction and aggregation of network communications through the network, the gateway and aggregation application performing:

identifying regenerable information in the message traffic at a sending side, the regenerable information corresponding to data content in the message traffic reproducible at a receiving side from information accessible at the receiving side;

eliminating the identified regenerable information to reduce the volume and associated bandwidth requirements of the remaining message traffic to provide reduced message traffic; and

framing the remaining message traffic according to predetermined formatting logic, the formatting logic providing transmission of the remaining reduced message traffic and regeneration of the reproducible data content from the identified regenerable information at the receiving side.

85. The computer system of claim 84 wherein the common access gateway further comprises a classifier, a reducer, a framer, a vocoder, and a shaper.

86. A computer program product having a computer readable medium operable to store computer program logic embodied in computer program code encoded thereon for aggregating network message traffic comprising:

computer program code for identifying regenerable information in the message traffic at a sending side, the regenerable information corresponding to data content in the message traffic reproducible at a receiving side from information accessible at the receiving side;

computer program code for eliminating the identified regenerable information to reduce the volume and associated bandwidth requirements of the remaining message traffic to provide reduced message traffic; and

computer program code for framing the remaining message traffic according to predetermined formatting logic, the formatting logic providing transmission of the remaining reduced message traffic and regeneration of the reproducible data content from the identified regenerable information at the receiving side.

87. A computer data signal for aggregating network message traffic comprising:

program code for identifying regenerable information in the message traffic at a sending side, the regenerable information corresponding to data content in the message traffic reproducible at a receiving side from information accessible at the receiving side;

program code for eliminating the identified regenerable information to reduce the volume and associated bandwidth requirements of the remaining message traffic to provide reduced message traffic; and

program code for framing the remaining message traffic according to predetermined formatting logic, the formatting logic providing transmission of the remaining reduced message traffic and regeneration of the reproducible data content from the identified regenerable information at the receiving side.

88. A network communications device for aggregating network message traffic comprising:

means for identifying regenerable information in the message traffic at a sending side, the regenerable information including data content in the message traffic reproducible at a receiving side from information accessible at the receiving side;

means for eliminating the identified regenerable information to reduce the volume and associated bandwidth requirements of the remaining message traffic to provide reduced message traffic; and

means for framing the remaining message traffic according to predetermined formatting logic, the formatting logic providing transmission of the remaining reduced message traffic and regeneration of the reproducible data content from the identified regenerable information at the receiving side.

89. The method of claim 1 wherein the classifying further comprises:

identifying circuit switched from packet switched traffic, circuit switched traffic characterized in that regular interval based transmission occur and packet switched characterized by recipient identity in the traffic;

identifying signaling and HDLC derived traffic; and

distinguishing speech frames in the message traffic from data traffic and signaling traffic.

90. The method of claim 1 further comprising:

establishing an overhead limit indicative of an acceptable ratio of message traffic to resultant reduced message traffic;

determining when the selective extraction and reduction results in the size of the resultant reduced message traffic exceeding the acceptable ratio; and

limiting the extraction and reduction when the size exceed the acceptable ratio.